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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,515	05/01/2002	Audrey Goddard	10466/300	8122

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EXAMINER	
ROMEO, DAVID S	

ART UNIT	PAPER NUMBER
1647	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/063,515	GODDARD ET AL.	
	Examiner	Art Unit	
	David S. Romeo	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/22/2008 has been entered.

Claims 1–5 and 7–11 are pending and being examined.

Maintained Formal Matters, Objections, and/or Rejections:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1–5 and 7–11 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Afar (U. S. Publication No. 20050019870).

Applicants argue that:

> …No antibody is disclosed at "page 34, full paragraph 3." Page 34 of US 2005/0019870 only contains a portion of the sequence listing for the application, and there is no disclosure of any specific antibody on that page.

Applicants' arguments have been fully considered but they are not persuasive. Instead of stating "page 34, full paragraph 3," the last Office action should have stated "paragraph 0112." Similarly, the Office action should have stated "Example 3, page 25" instead of "Example 3, page 76." The examiner relies on Afar, paragraphs 0104-0118 (previously indicated as "page 38, line 25 through page 43, line 12") for the disclosure of anti-24P4C12 antibodies, including monoclonal, polyclonal, and humanized antibodies as well as fragments containing the antigen binding domain and/or one or more complementarity determining regions of these antibodies and labeled forms thereof.

> Applicants have reviewed the Afar and find no disclosure in Afar that "clearly identifies immunogenic regions that are identical to the immunogenic regions in applicants' SEQ ID NO:10 and clearly discloses antibodies to those identical immunogenic regions." The closest disclosure Applicants can find is in ¶[0112], where Afar states that "[t]he amino acid sequence of the 24P4C12 ... may be used to select specific regions of the 24P4C12 protein for generating antibodies," and that these regions can be identified using methods known in the art, such as Kyte-Doolittle analysis. Afar at ¶[0112] (emphasis added). However, Afar does not disclose that Afar et al. actually utilized the 24P4C12 sequence to select a specific region for making antibodies (with one exception discussed below). As a result, Afar does not identify or disclose any specific hydrophilic or immunogenic regions of the 24P4C12 protein that can or should be used. Thus, contrary to the Examiner's assertion, Afar does not "clearly identif[y] immunogenic regions that are identical to the immunogenic regions in applicants' SEQ ID NO:10 and clearly disclose[] antibodies to those identical immunogenic regions." At best, Afar suggests making antibodies to immunogenic regions of the 24P4C12 protein - not a particularly illuminating disclosure since one cannot make antibodies to non-immunogenic regions. Afar's teachings are general in nature and cannot be anticipatory because these teachings do not describe the invention in as full detail as that which is claimed. Absent such teachings, Afar cannot anticipate the claims.
>
> At best, this is a disclosure of a potential genus of antibodies that one of skill in the art could make, and no more. It is not an express or inherent disclosure of any particular species of antibodies, much less an antibody as claimed in the present application. Afar simply does not disclose a particular species of antibody based on this teaching. Applicants invite the Examiner to point to the particular portion

> of Afar where a particular antibody is disclosed - Applicants are aware of only one.

Applicants' arguments have been fully considered but they are not persuasive. Afar teaches:

> [0112] The amino acid sequence of the 24P4C12 as shown in FIGS. 1A-1D (SEQ ID NO: 2) may be used to select specific regions of the 24P4C12 protein for generating antibodies. For example, hydrophobicity and hydrophilicity analyses of the 24P4C12 amino acid sequence may be used to identify hydrophilic regions in the 24P4C12 structure. Regions of the 24P4C12 protein that show immunogenic structure, as well as other regions and domains, can readily be identified using various other methods known in the art, such as ... Kyte-Doolittle... analysis.

Afar's teachings are specific in nature and anticipatory because these teachings describe the invention in at least as full, if not fuller, detail as that which is claimed.

Applicants argue that:

> The only example of an antibody to a specific portion of the 24P4C12 protein disclosed in Afar is found in Example 4. Afar teaches a polyclonal antibody to a peptide "corresponding to amino acids 1-14 ... of the 24P4C12 protein sequence." Afar at ¶[0235]. As Applicants have previously noted, according to the Examiner, amino acids 398-710 of 24P4C12 disclosed in Afar are identical to amino acids 9-321 of SEQ ID NO:10, but not amino acids 1-397. Thus, the Examiner has not established that amino acids 1-14 of the 24P4C12 protein sequence are similar to SEQ ID NO:10 of the instant specification. Absent such a showing, there is no basis to assert that the antibodies disclosed in Example 4 of Afar anticipate or render obvious the pending claims.
>
> In addition, Afar discloses a prophetic example of monoclonal antibodies to the 24P4C12 protein in Example 9. That example discloses that "[i]n order to generate 24P4C12 monoclonal antibodies, a glutathione-S-transferase (GST) fusion protein encompassing a 24P4C12 protein is synthesized and used as immunogen. Alternatively, 24P4C12 can be conveniently expressed in 293T cells transfected with a CMV-driven expression vector encoding 24P4C12 with a C-terminal 6xHis and MYC tag (pcDNA3.1/mycHIS, Invitrogen)." Afar at ¶[0251] (emphasis added). As noted previously, according to the Examiner's alignment, 397 of the 710 amino acids of 24P4C12 are apparently completely different from SEQ ID NO:10. That means that 56% of 24P4C12 differs from SEQ ID NO:10.

> Thus, there is no reason to believe that a monoclonal antibody generated by use of the entire 24P4C12 protein would satisfy the limitations of the pending claims.

Applicants' arguments have been fully considered but they are not persuasive. The examiner did not rely on Example 4 or 9 to establish anticipation or obviousness. Furthermore, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. Furthermore, Afar's disclosure in Examples 4 and 9 do not constitute a teaching away from Afar's teaching of "[0112]...Regions of the 24P4C12 protein that show immunogenic structure" because such disclosure does not criticize, discredit, or otherwise discourage the making of antibodies to regions of the 24P4C12 protein that show immunogenic structure.

Applicants argue that:

> In sum, Afar does not disclose any antibodies to any specific region of 24P4C12, other than amino acids 1-14. Instead, there is merely a generic disclosure of antibodies to 24P4C12. While it is possible that an antibody to 24P4C12 would bind the polypeptide of SEQ ID NO:10, it is not a certainty since more than half of 24P4C12 apparently bears no similarity to SEQ ID NO:10. Mere possibility is not sufficient for inherent anticipation: "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." M.P.E.P. §2112 IV (8th ed. 2004), quoting In re Robertson, 169 F.3d 743,745 (Fed. Cir. 1999) (emphasis added).

Applicants' arguments have been fully considered but they are not persuasive. Afar's teachings are specific in nature and anticipatory because these teachings describe the invention in at least as full, if not fuller, detail as that which is claimed, as discussed above. Afar readily identifies regions of the 24P4C12 protein that show immunogenic structure and discloses antibodies to those regions. Based on the Kyte-Doolittle plot, Afar clearly identifies immunogenic regions that are identical to the immunogenic regions in applicants' SEQ ID NO:

10 and clearly discloses antibodies to those identical immunogenic regions. The examiner is aware that a genus does not always anticipate a claim to a species within the genus. However, when the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. See MPEP § 2131.02. Anti-24P4C12 antibodies that specifically bind epitopes in the 398–710 amino acid region of 24P4C12 will also specifically bind SEQ ID NO: 10 because this region of 24P4C12 is identical to amino acids 34–321 of SEQ ID NO: 10. Because Afar clearly identifies the immunogenic regions of 24P4C12 with reference to Kyte-Doolittle and clearly discloses antibodies that bind those regions, Afar clearly identifies antibodies that bind the immunogenic regions of amino acids 398-710 of 24P4C12.

Applicant argues that:

> The Examiner attempts to overcome this shortcoming by generating a Kyte-Doolittle plot some 5 years after the filing of the instant application. This plot is in no way inherent in Afar, and does not constitute part of the Afar disclosure. Thus, regardless of whether the plot is accurate or not, a point Applicants have not conceded, it is not a part of the Afar disclosure and does not transform Afar's generic disclosure of possible antibodies to 24P4C12 into a disclosure of specific antibodies. As noted previously, the plot shows that there are hydrophilic regions throughout the entire length of 24P4C12, including amino acids 1-397, which have no apparent similarity to SEQ ID NO:10. Thus, the Examiner's post-filing Kyte-Doolittle plot, even if accurate, discloses nothing more specific regarding the claimed antibodies beyond Afar's generic disclosure of generating antibodies. Absent the plot, Afar generically discloses possible antibodies to immunogenic portions of 24P4C12, some of which antibodies may, but do not necessarily bind the polypeptide of SEQ ID NO: 10. In view of the plot, Afar teaches exactly the same thing - Afar generically discloses possible antibodies to immunogenic portions of 24P4C12, some of which antibodies may, but do not necessarily bind the polypeptide of SEQ ID NO:10. A generic disclosure of possible antibodies to an entire protein is not a disclosure of antibodies to a specific region and the Examiner's plot does not change this fact. The disclosed generic teachings toward generating antibodies to 24P4C12 clearly do not inherently possess the claimed features of the pending claims.

Applicants' arguments have been fully considered but they are not persuasive. Afar teaches:

> [0112] The amino acid sequence of the 24P4C12 as shown in FIGS. 1A-1D (SEQ ID NO: 2) may be used to select specific regions of the 24P4C12 protein for generating antibodies. For example, hydrophobicity and hydrophilicity analyses of the 24P4C12 amino acid sequence may be used to identify hydrophilic regions in the 24P4C12 structure. Regions of the 24P4C12 protein that show immunogenic structure, as well as other regions and domains, can readily be identified using various other methods known in the art, such as ... Kyte-Doolittle... analysis.

Afar's teachings are specific in nature and anticipatory because these teachings describe the invention in at least as full, if not fuller, detail as that which is claimed. The Kyte-Doolittle plot is concretely supported by Afar. Applicants do not challenge the correctness, notoriety or repute of the Kyte-Doolittle plot. Applicants' do not challenge the fact that regions of the 24P4C12 protein that show immunogenic structure can readily be identified using various methods known in the art, such as Kyte-Doolittle. Therefore, the ability of one of ordinary skill in the art to readily identify regions of the 24P4C12 protein that show immunogenic structure must be considered conclusive. Therefore, one of ordinary skill in the art could have readily predicted immunogenic regions in the 398–710 amino acid region of 24P4C12 and could have readily made antibodies to those regions. Anti-24P4C12 antibodies that specifically bind epitopes in the 398–710 amino acid region of 24P4C12 will also specifically bind SEQ ID NO: 10 because this region of 24P4C12 is identical to amino acids 34–321 of SEQ ID NO: 10. The examiner is aware that a genus does not always anticipate a claim to a species within the genus. However, when the species is clearly named, the species claim is anticipated no matter how many other species are additionally named. See MPEP § 2131.02.

Applicants argue that the Afar reference is not available as prior art because it is antedated by U.S. Provisional application No. 60/088,030. Applicants' arguments have been fully considered but they are not persuasive.

According to M.P.E.P. § 2136.05:

> But a prior application which was not copending with the application at issue cannot be used to antedate a reference.

U.S. Provisional application No. 60/088,030 was not copending with the application at issue.

Also according to M.P.E.P. § 2136.05:

> The filing date can also be antedated by applicant's earlier … provisional application if 35 U.S.C. 119 is met and the … provisional application "supports" (conforms to 35 U.S.C. 112, first paragraph, requirements) all the claims of the U.S. application.

The disclosure in U.S. Provisional application No. 60/088,030 does not support a specific and substantial or well established utility of the PRO874 polypeptide. The only patentable utility for the claimed antibodies is in the detection of the PRO874 polypeptide. A method of assaying for or identifying a material that itself has no specific and/or substantial utility is a situation that requires or constitutes carrying out further research to identify or reasonably confirm a real world context of use and, therefore, does not define a substantial utility. A deficiency under 35 U.S.C. 101 also creates a deficiency under 35 U.S.C. 112, first paragraph. Therefore, U.S. Provisional application No. 60/088,030 does not conform to 35 U.S.C. 112, first paragraph, requirements.

Although U.S. Provisional application No. 60/088,030 discloses that PRO874 has sequence identity with ammonium transporter proteins at about amino acids 204-230 (page 30), not all proteins that share sequence identity with ammonium transporter proteins transport ammonia. For example, Rh proteins show sequence homology to ammonium transport proteins.

However, the RhD and RhCE proteins do not appear to function as ammonium transport proteins. See Conroy (Br J Haematol. 2005 Nov;131(4):543-51), paragraph bridging pages 543-544.

As indicate previously, Afar discloses that 24P4C12 provides a diagnostic and/or therapeutic target for prostate and other cancers (Abstract). U.S. Provisional application No. 60/088,030 merely shows that PRO874 is a "multi-span transmembrane polypeptide." Therefore, U.S. Provisional application No. 60/088,030 shows less of the invention than is shown in Afar.

Conclusion

No claims are allowable.

ANY INQUIRY CONCERNING THIS COMMUNICATION OR EARLIER COMMUNICATIONS FROM THE EXAMINER SHOULD BE DIRECTED TO DAVID S. ROMEO WHOSE TELEPHONE NUMBER IS (571) 272-0890. THE EXAMINER CAN NORMALLY BE REACHED ON MONDAY THROUGH FRIDAY FROM 9:00 A.M. TO 5:30 P.M. IF ATTEMPTS TO REACH THE EXAMINER BY TELEPHONE ARE UNSUCCESSFUL, THE EXAMINER'S SUPERVISOR, MANJUNATH RAO, CAN BE REACHED AT (571)272-0939.

IF SUBMITTING OFFICIAL CORRESPONDENCE BY FAX, APPLICANTS ARE ENCOURAGED TO SUBMIT OFFICIAL CORRESPONDENCE TO THE CENTRAL FAX NUMBER FOR OFFICIAL CORRESPONDENCE, WHICH IS (571) 273-8300.

CUSTOMERS ARE ALSO ADVISED TO USE CERTIFICATE OF FACSIMILE PROCEDURES WHEN SUBMITTING A REPLY TO A NON-FINAL OR FINAL OFFICE ACTION BY FACSIMILE (SEE 37 CFR 1.6 AND 1.8).

ANY INQUIRY OF A GENERAL NATURE OR RELATING TO THE STATUS OF THIS APPLICATION OR PROCEEDING MAY BE OBTAINED FROM THE PATENT APPLICATION INFORMATION RETRIEVAL (PAIR) SYSTEM. STATUS INFORMATION FOR PUBLISHED APPLICATIONS MAY BE OBTAINED FROM EITHER PRIVATE PAIR OR PUBLIC PAIR. STATUS INFORMATION FOR UNPUBLISHED APPLICATIONS IS AVAILABLE THROUGH PRIVATE PAIR ONLY. FOR MORE INFORMATION ABOUT THE PAIR SYSTEM, SEE HTTP://PAIR-DIRECT.USPTO.GOV. CONTACT THE ELECTRONIC BUSINESS CENTER (EBC) AT 866-217-9197 (TOLL-FREE) FOR QUESTIONS ON ACCESS TO THE PRIVATE PAIR SYSTEM,

/DAVID S ROMEO/
PRIMARY EXAMINER, ART UNIT 1647

DSR
AUGUST 4, 2008